Attachment F

PG&E's Comments on the North Fork Feather River Listing for Water Temperature

WATER SEGMENT: North Fork Feather River below Lake Almanor to Lake Oroville (The proposed 2008 listing included the entire 56+ mile stretch – without any segmentation)

POLLUTANT: Water temperature

SOURCE: Flow Regulation/Modification | Hydromodification

STATUS of Proposed 2008 303(d) LISTING: Listed

CVRWQCB STAFF BASIS: After review of the available data and information, Central Valley Regional Water Quality Control Board (CVRWQCB) staff concluded that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards were exceeded and a pollutant contributes to or causes the problem.

PG&E's RECOMMENDATION: Address potential for listing by water segment delineation and Do Not List based upon available data for each water segment.

PG&E's COMMENTS: The CVRWQCB listed the entire North Fork Feather River (NFFR) from the Seneca Reach through the Big Bend Reach due to exceedances of water temperature guidelines found in Sullivan et. al. (2000) and various reports on fish population/community degradation, as interpreted from the data reported in Wales et. al (1952), Rowely (1955), Gerstung (1973), and Wixom (1989), along with other anecdotal information (historical photos). Arguments provided in the Water Segment Delineation Factsheet (Attachment A) explain the necessity for determining appropriateness of listing or Do Not List by defined river segments based upon environmental, biological, and physical differences. PG&E believes that the TMDL process will be more reflective of current conditions and truly impaired water segments may be addressed more efficiently if water segment delineation were followed when determining the list of 303(d) impaired waters.

First, the Feather River changes substantially as it moves from its headwaters into the Sacramento Valley due to changes in elevation (from over 4,500 ft to 900 ft), gradient (from $\geq$140 ft/mile to $\leq$ 45 ft/mile), climate (up to a summer time average diurnal difference of 10^{o}F), and river flow (average of less than 35 cfs to more than 250 cfs between sections. Thus, the Feather River should be evaluated by segment and below we have outlined the specific segments

and the data correlated with each segment. Factsheets for each reach of the NFFR (Seneca, Belden, Rock Creek, Cresta, Poe, and Big Bend) are provided in this submission and include information regarding the health of each river segment based upon the most recent readily available data from the specific water segments (see Figure F-1).

Second, as outlined in Attachment B, PG&E believes that the guidelines in the Sullivan report should be utilized as *guidelines*, not as specific objectives. Thus, the existence of a number of exceedances of the guidelines should not automatically require the river segment to be listed. These exceedances should be evaluated along with other biological data to determine if the actual basin plan objectives for water temperature are being met. Further, there are numerous concerns with using the Sullivan report guideline in this context, including the fact that the annual maximum water temperature could not be met naturally in many points along the river.

Finally, the six lines of biological degradation evidence use old, out of date reports with data no later than the 1980s. These reports generally do not reflect current flow conditions in the river system and should not be used. Much more recent data has been collected during the various relicensing and FERC compliance processes on the Feather River and this data has been submitted to the agencies (including the CVRWQCB and the State Water Resources Control Board [SWRCB]) for review.

A number of reference documents have been cited in the factsheets that support the conclusions presented by PG&E in each factsheet. Of particular interest for the Feather River are the following: EA Engineering, Science, and Technology (2001), ECORP (2003, rev. 2004), PG&E (2003), and PG&E (2006). Specifically, information on angler creel surveys are provided in EA Engineering, Science, and Technology (2001) (tables 3-5 and 3-7) for the Belden reach; fisheries assemblage, composition, and population estimates are provided in ECORP Consulting, Inc.(2003) (fish assemblage, tables 6, 8, and 10; relative composition, figures 7, 9, and 11; and total population estimates, tables 18, 19, and 20) for the Seneca and Belden reaches; angler creel surveys, fish population and assemblage in PG&E (2006) (pages 9&10) for the Rock Creek and Cresta reaches; and fish community, distribution, and abundances in PG&E (2003) (section E3.1.3, pages E3.1-10 -62) for the Poe Reach. These data show that the water segments are biologically healthy; therefore, this water body should not be listed for water temperature on the 303(d) list.

Factsheets for each reach of the NFFR (Seneca, Belden, Rock Creek, Cresta, Poe, and Big Bend) are provided below and include information regarding the health of each river segment based upon the most recent readily available data.

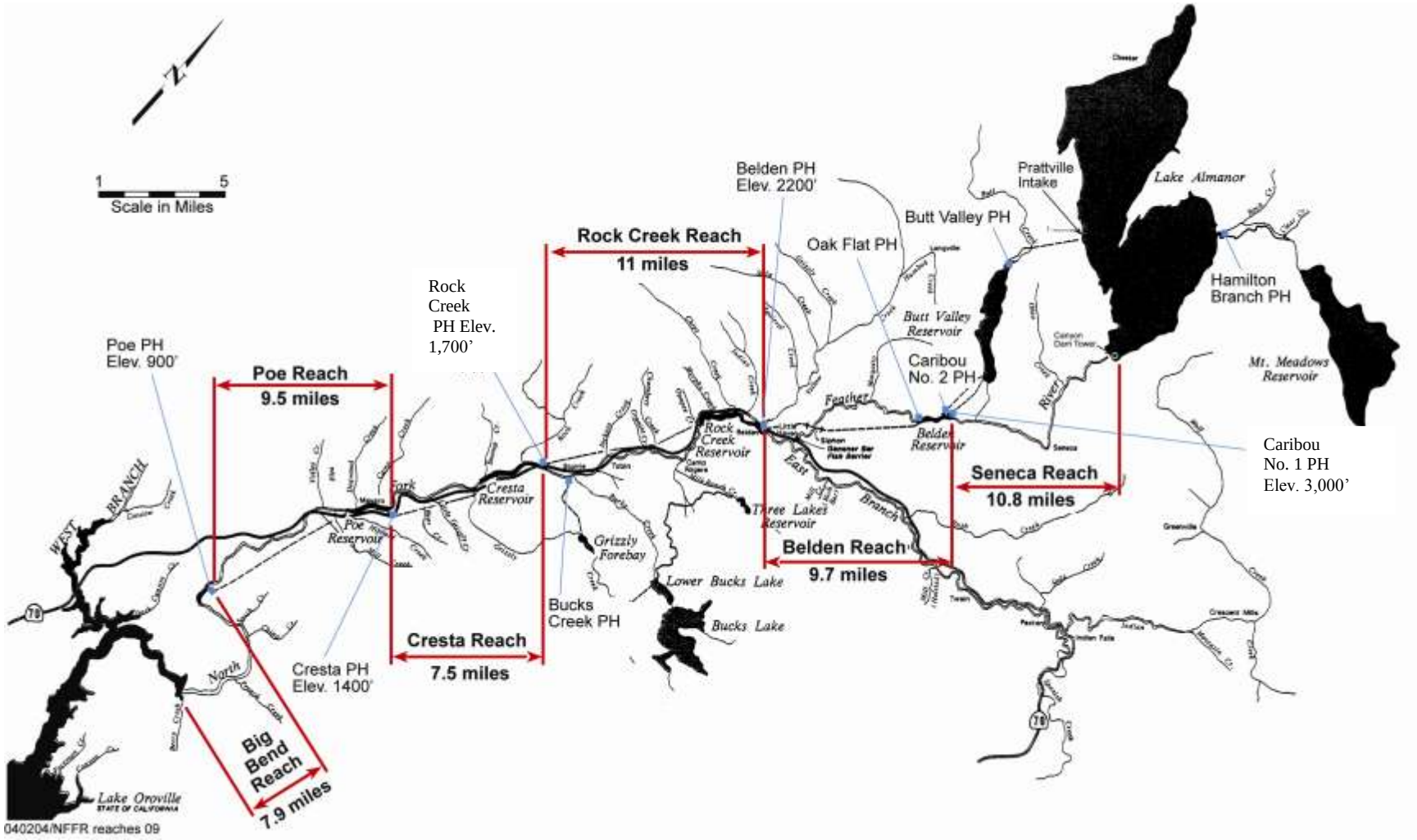

Figure F-1. Water Segment Delineation for the North Fork Feather River for Water Temperature Assessment

FACTSHEETS

EVALUATION OF NORTH FORK FEATHER RIVER

BY SEGMENT OR REACH

WATER SEGMENT: North Fork Feather River – Seneca Reach (between Canyon Dam and Caribou 1 and 2 powerhouses)

POLLUTANT: Water temperature

SOURCE: Flow Regulation/Modification | Hydromodification

STATUS of Proposed 2008 303(d) LISTING: Listed

CVRWQCB STAFF BASIS: After review of the available data and information, Central Valley Regional Water Quality Control Board (CVRWQCB) staff concluded that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards were exceeded and a pollutant contributes to or causes the problem.

PG&E's RECOMMENDATION: Do Not List

PG&E's COMMENTS: Available receiving water temperature data and aquatic biological data show that the water segment does not exceed the Sullivan guideline under normal operations and that the water segment is biologically healthy; therefore, this water body should not be listed for water temperature.

The CVRWQCB listed the NFFR, including this river segment due to exceedances of water temperature guidelines found in Sullivan et. al. (2000) and evidence of fish population/community degradation, as interpreted from the data reported in Gerstung (1973). Refer to the Water Segment Delineation Factsheet for discussion regarding the importance of reviewing available data by water segment to determine listing status for specific water segments on the 303(d) list (Attachment A). In addition, appropriate use of the Sullivan report would be to use it strictly as an evaluation guideline (i.e., screening tool) in conjunction with available biological data to determine the health of the water segment (Attachment B).

Under normal operations in the Seneca Reach there are no water temperature data that exceed the Sullivan guideline or the US EPA guideline and the biological data show that the water segment is not impaired and therefore should be removed from the 303(d) list.

Water temperature data for this reach, which originates at the base of Canyon Dam (elev. 4500 ft) 10.8 miles upstream, was presented in PG&E (2003) in tables E.2.4-2 and E.2.5-4 at up to four locations: below Canyon Dam, at Seneca Bridge, above Butt Creek, and above Caribou 1 PH for summer months of 1985, 1986, 1999, 2000, and 2001. The highest average daily

temperature of 20.1°C was recorded in August of 1996 and was due to a dam safety required seismic retrofit of Canyon Dam resulting in instream releases made from the upper gate rather than using the lower release gate as under normal operations. Under normal operations, typical water temperatures reported from 2001 indicate a maximum daily mean of 16.0°C and a maximum daily temperature of 17.2°C. These actual temperatures for this 10.8 mile segment of the NFFR show that under normal operations the temperature guideline from Sullivan (2000) is not exceeded.

Additionally, the available biological data supports the conclusion that this segment is biologically healthy. PG&E believes that because the data presented in Gerstung (1973) is pre-1973, it does not accurately reflect current biological conditions. There are significant newer data collected as part of the recent relicensing of the Upper North Fork Feather River Project (UNFFRP) that should be evaluated in making a listing determination. The most recent data on fish species present (tables 6, 8, and 10), relative composition (figures 7, 9, and 11), and total population estimates (tables 18, 19, and 20) for this reach are presented in ECORP Consulting, Inc. (2003) (see Table 2). During three years of fishery studies, rainbow trout made up between 28 to 40% of the total fish population. A comparison of catchable adult trout per mile of stream reach relative to other California streams based on Table 2 in Gerstung (1973) is presented in Table 34, ECORP (2003), and shows that the average sampling site in the Seneca Reach was in either the top 2% (800+ trout/mile) or 17% (400-799 trout/mile) category for each sampling effort (2000 – 2002).

Conclusion

Based on the fact that under normal operating conditions, water temperatures in this reach do not exceed the Sullivan guideline or the US EPA guideline and typically both daily average and daily maximum temperatures are less than 20.0°C, that the fish population has a relatively high percentage of rainbow trout, and catchable sized trout are in the upper ranges relative to other California streams presented in Gerstung (1973), this stream reach should be considered biologically healthy and should be removed from the 303(d) list of impaired waters.

WATER SEGMENT: North Fork Feather River – Belden Reach (between Belden Forebay and Belden Powerhouse)

POLLUTANT: Water temperature

SOURCE: Flow Regulation/Modification | Hydromodification

STATUS of Proposed 2008 303(d) LISTING: Listed

CVRWQCB STAFF BASIS: After review of the available data and information, Central Valley Regional Water Quality Control Board (CVRWQCB) staff concluded that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards were exceeded and a pollutant contributes to or causes the problem.

PG&E RECOMMENDATION: Do Not List

PG&E COMMENTS: Available receiving water temperature data and aquatic biological data show that the water segment is biologically healthy; therefore, this water body should not be listed for water temperature.

The CVRWQCB listed the NFFR, including this river segment due to exceedances of water temperature guidelines found in Sullivan et. al. (2000) and evidence of fish population/community degradation, as interpreted from the data reported in Rowely (1955). Refer to the Water Segment Delineation Factsheet for discussion regarding the importance of reviewing available data by water segment to determine listing status for specific water segments on the 303(d) list (Attachment A). In addition, appropriate use of the Sullivan report would be to use it strictly as an evaluation guideline (i.e., screening tool) in conjunction with available biological data to determine the health of the water segment (Attachment B).

While there are periodic exceedances of the Sullivan guideline and few exceedances of the US EPA guideline in the Belden Reach, there are no other biological indicators to support listing of this water segment on the 303(d) list.

PG&E believes that because the biological data presented is pre-1955, it does not accurately reflect current biological conditions. There is significant newer data collected as part of the recent hydro relicensing of the UNFFRP that should be evaluated in making a listing determination. The most recent data on fish species present (tables 6, 8, and 10), relative composition (figures 7, 9, and 11), and total population estimates (tables 18, 19, and 20) for this reach are presented in ECORP Consulting, Inc., (2003) (see Table 2) and was

collected as part of the relicensing of the UNFFRP. Rainbow trout made up between 21 to 27% of all of the fish collected for this river segment.

Angler surveys conducted in this reach in 2000 by EA Engineering, Science, and Technology (2001) reported a catch rate of 0.66 trout per hour, in which 100% of all fish caught were rainbow trout, and that 20% of the trout caught were equal to or greater than 11 inches long (Figure F-2. In general, these were all greater than the data reported by Rowely (1955), and are shown in Table F-1 and in Figure F-2 below.

Adult catchable trout per mile of stream reach relative to other California streams based on Table 2 in Gerstung (1973) is presented in Table 34, ECORP (2003), and show that the average sampling site in the Belden Reach was in either the top 17% or 46% for each sampling effort (2000 – 2002). Based on the relatively high composition percentage of rainbow trout and catchable sized trout relative to Gerstung (1973), this stream reach should be considered biologically healthy regardless of periodic exceedances of annual maximum temperature guideline presented in Sullivan et. al. (2000).

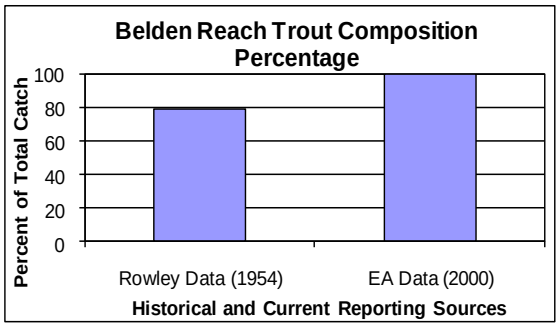

Figure F-2. Historical and Current Trout Composition Percentage for Belden Reach .

Table F-1. Comparison of trout caught per hour, catch composition, and size of trout between Rowely (1955) and EA (2001)

	Rowely (1955)	**EA (2001)**
Number of trout caught per hour	0.33	0.66
Percent of fish caught that were trout	80%	100%
Size of trout	Average length = 10.17”	20% > 11”

Conclusion

While there are some exceedances of the Sullivan and US EPA guidelines in this reach, the available current data show that water temperature alone is not a good measure of the health of water segments as displayed by the healthy

fish populations in Belden Reach. Therefore, this water segment should be removed from the 303(d) list of impaired water bodies.

WATER SEGMENT: North Fork Feather River – Rock Creek Reach (between Rock Creek Reservoir and Rock Creek Powerhouse)

POLLUTANT: Water temperature

SOURCE: Flow Regulation/Modification | Hydromodification

STATUS of Proposed 2008 303(d) LISTING: Listed

CVRWQCB STAFF BASIS: After review of the available data and information, Central Valley Regional Water Quality Control Board (CVRWQCB) staff concluded that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards were exceeded and a pollutant contributes to or causes the problem.

PG&E RECOMMENDATION: Do Not List

PG&E COMMENTS: Available receiving water temperature and aquatic biological data show that the water segment is biologically healthy; therefore, this water body should not be listed for water temperature.

The CVRWQCB listed the NFFR, including this river segment due to exceedances of water temperature guidelines found in Sullivan et. al. (2000) and evidence of fish population/community degradation, as interpreted from the data reported in Wixom (1989). Refer to the Water Segment Delineation Factsheet for discussion regarding the importance of reviewing available data by water segment to determine listing status for specific water segments on the 303(d) list (Attachment A). In addition, appropriate use of the Sullivan report would be to use it strictly as an evaluation guideline (i.e., screening tool) in conjunction with available biological data to determine the health of the water segment (Attachment B).

While there are periodic exceedances of the Sullivan guideline and very few if any exceedances of the US EPA guideline, there are no other biological indicators to support listing of this water segment on the 303(d) list.

PG&E believes that because the data presented is from 1946-1985, it does not accurately reflect current biological conditions under current flows required by the new Federal Energy Regulatory Commission (FERC) hydro license implemented in 2002. There are significant newer data collected as part of the new license compliance monitoring conducted since 2002 (License issued October 2001). In addition, there is at least a 2,300 foot drop in elevation at this reach compared to the elevation of waters originating at Canyon Dam

which would result in greater climatic influences on water temperature in this stream reach.

The most recent data on fish species present, relative composition, and total population estimates for this reach are presented in PG&E (2006; see Table 2 for report references). Seven species of fish were collected in the combined Rock Creek and Cresta reaches during 2005 by electrofish sampling (page 9). Rainbow trout made up 12% of the total catch, Sacramento sucker 34%, Sacramento pikeminnow 8%, hardhead 12%, smallmouth bass 5%, and sculpin (2 species) 30%.

Angler surveys conducted in this reach in 2005 reported that 74% of all fish caught were rainbow trout, with an average length of 12.3 inches and with almost 7% of them being equal to or greater than 17 inches long. Angler catch per hour in 2004, and 2005 for the riverine portion of the Rock Creek reach was 0.90 and 0.91 trout/hour, respectively, which is very close to the 1 fish/hour reported for the pre-project period (1946) by Wixom (1989). Table F-2 and Figure F-3, below, compare all of the trout/hour data presented in the original listing along with the most recent data from 2004 and 2005. Based on the relatively high composition percentage of rainbow trout reported in the angler surveys and success rate (catch /hour), this stream reach should be considered biologically healthy regardless of the periodic water temperature exceedances of the Sullivan guideline.

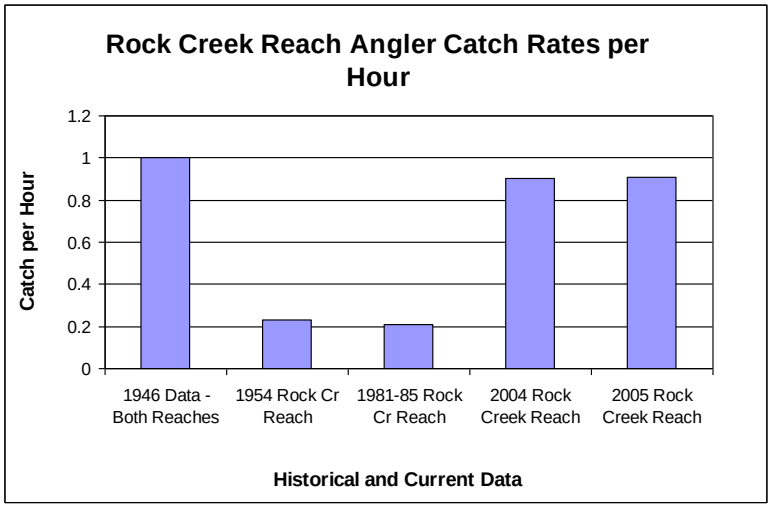

Figure F-3. Number of rainbow trout caught per hour by study year for Rock Creek Reach

Table F-2. Comparison of rainbow catch rates (number of fish per hour) for the Rock Creek Reach of the NFFR.

Year	**1946**	**1954**	**1981-1985**	**2004**	**2005**
Rainbow trout caught per hr.	1.0	0.23	0.21	0.90	0.91

Conclusion

The available current data show that water temperature alone is not a good measure of the health of water segments as displayed by the healthy fish populations and catch per hour of rainbow trout in 2004 and 2005 being nearly equal to the highest historical value listed for 1946 for the Rock Creek Reach. While there are some exceedances of the Sullivan guideline in this reach there are very few if any exceedances of the US EPA guideline. In addition, the elevation and climatic influences on the waters in this reach are greater compared to the waters originating at Canyon Dam approximately 20.5 miles upstream and at an elevation approximately 2,8 00 ft greater than at this end of this reach (at the Rock Creek Powerhouse). Therefore, this water segment should be removed from the 303(d) list of impaired water bodies.

WATER SEGMENT: North Fork Feather River – Cresta Reach (between Cresta Reservoir and Cresta Powerhouse)

POLLUTANT: Water temperature

SOURCE: Flow Regulation/Modification | Hydromodification

STATUS of Proposed 2008 303(d) LISTING: Listed

CVRWQCB STAFF BASIS: After review of the available data and information, Central Valley Regional Water Quality Control Board (CVRWQCB) staff concluded that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards were exceeded and a pollutant contributes to or causes the problem.

PG&E RECOMMENDATION: Do Not List

PG&E COMMENT: Available receiving water temperature and aquatic biological data show that the water segment is biologically healthy; therefore, this water body should not be listed for water temperature.

The CVRWQCB listed the NFFR, including this river segment due to exceedances of water temperature guidelines found in Sullivan et. al. (2000) and evidence of fish population/community degradation, as interpreted from the data reported in Wixom (1989). Refer to the Water Segment Delineation Factsheet for discussion regarding the importance of reviewing available data by water segment to determine listing status for specific water segments on the 303(d) list (Attachment A). In addition, appropriate use of the Sullivan report would be to use it strictly as an evaluation guideline (i.e., screening tool) in conjunction with available biological data to determine the health of the water segment (Attachment B).

While there are periodic exceedances of the Sullivan guideline and few if any exceedances of the US EPA guideline, there are no other biological indicators to support listing of this water segment on the 303(d) list.

PG&E believes that because the data presented is from 1946-1985, it does not accurately reflect current biological conditions under current flows required by the new FERC hydro license implemented in 2002. There are significant newer data collected as part of the new license compliance monitoring conducted since 2002 (License issued October 2001). In addition, there is a 3,100 foot drop in elevation at the end of this reach (at the Cresta Powerhouse) compared to the elevation of the waters originating at Canyon Dam which would result in much greater climatic influences on water

temperature in this stream reach compared to waters upstream at Canyon Dam.

The most recent data on fish species present, relative composition, and total population estimates for this reach are presented in PG&E (2006; see Table 2 for report references). Seven species of fish were collected in the combined Rock Creek and Cresta reaches during 2005 by electrofish sampling (page 9). Rainbow trout made up 12% of the total catch, Sacramento sucker 34%, Sacramento pikeminnow 8%, hardhead 12%, smallmouth bass 5%, and sculpin (2 species) 30%.

Angler surveys conducted in these reaches in 2005 reported that 74% of all fish caught were rainbow trout, with an average length of 12.3 inches and with almost 7% of them being equal to or greater than 17 inches long. Angler catch per hour in 2004 and 2005 for the riverine portion of the Cresta reach was 1.07 and 0.79 trout/hour, respectively, equal to the 1 fish/hour reported for the pre-project period (1946) by Wixom (1989) in 2004 and very close to it in 2005. Figure F-4 and Table F-3 below compares all of the trout/hour data presented in the original listing along with the most recent data from 2004 and 2005. Based on the relatively high percentage of rainbow trout reported in the angler surveys and success rate (catch /hour), this stream reach should be considered biologically healthy regardless of the periodic water temperature exceedances of the Sullivan guideline.

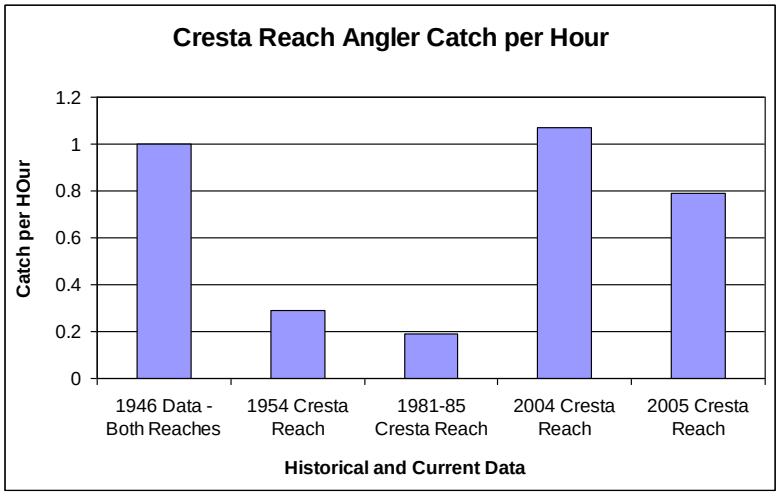

Figure F-4. Number of rainbow trout caught per hour by study year for Cresta Reach.

Table F-3. Comparison of rainbow catch rates (number of fish per hour) for the Cresta Reach of the NFFR

Year	1946	1954	1981-1985	2004	2005
Rainbow trout caught per hr.	1.0	0.29	0.19	1.07	0.79

Conclusion

The available current data show that water temperature alone is not a good measure of the health of water segments as displayed by the healthy fish populations and catch per hour of rainbow trout in 2004 and 2005 exceeding or nearly equal to the highest historical value listed for 1946 for the Cresta Reach. While there are some exceedances of the Sullivan guideline in this reach there are very few if any exceedances of the US EPA guideline. In addition, the elevation and climatic influences on the waters in this reach are greater compared the waters originating at Canyon Dam approximately 31.5 miles upstream and at an elevation approximately 3,100 ft greater than at the end of this reach . Therefore, this water segment should be removed from the 303(d) list of impaired water bodies.

WATER SEGMENT: North Fork Feather River – Poe Reach (between Poe Reservoir and Poe Powerhouse)

POLLUTANT: Water temperature

SOURCE: Flow Regulation/Modification | Hydromodification

STATUS of Proposed 2008 303(d) LISTING: Listed

CVRWQCB STAFF BASIS: After review of the available data and information, Central Valley Regional Water Quality Control Board (CVRWQCB) staff concluded that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards were exceeded and a pollutant contributes to or causes the problem.

PG&E RECOMMENDATION: Do Not List

PG&E COMMENT: Available receiving water aquatic biological data show that the water segment is biologically healthy; therefore, this water body should not be listed for water temperature.

The CVRWQCB listed the NFFR, including this river segment due to exceedances of water temperature guidelines found in Sullivan et. al. (2000) and evidence of fish population/community degradation, as interpreted from the data reported in PG&E (2003). Refer to the Water Segment Delineation Factsheet for discussion regarding the importance of reviewing available data by water segment to determine listing status for specific water segments on the 303(d) list (Attachment A). In addition, appropriate use of the Sullivan report would be to use it strictly as an evaluation guideline (i.e., screening tool) in conjunction with available biological data to determine the health of the water segment (Attachment B).

While there are exceedances of the Sullivan guideline and periodic exceedances of the US EPA guideline, there are no other biological indicators to support listing of this water segment on the 303(d) list.

The CVRWQCB assessment appears to focus on only the gill net surveys from the cited report. This is a very inaccurate representation of this data. A more accurate assessment of the fish assemblage, distribution, and relative composition can be made by reviewing the electrofishing results in Table E3.1-2 (page E3.1-17) and snorkeling results in tables E3.1-4 through 6 (pages E3.1-24 – 26) along with the gillnet survey found at Table E3.1-7. These results show that rainbow trout (all sizes) was the most abundant species observed per 100 ft in the snorkel surveys for all habitats combined

(Table E3.1-4, page E3.1-24). Based on the much greater numbers of rainbow trout reported in the snorkel surveys representing a much broader spectrum of habitat types than the limited gillnet surveys, this stream reach should not qualify as biologically degraded due to the single water temperature guideline presented in Sullivan et. al. (2000).

In addition, end of the Poe Reach (at the Poe Powerhouse) is located at approximately 900 feet in elevation, an approximate 3,600 foot drop in elevation at this reach compared to the elevation of waters originating at Canyon Dam approximately 48.5 miles upstream, which would result in much greater climatic influences on water temperature in this stream reach compared to higher elevation reaches on the NFFR.

Conclusion

The available current data show that water temperature alone is not a good measure of the health of water segments as displayed by the much greater numbers of rainbow trout reported in the snorkel surveys representing a much broader spectrum of habitat types than the limited gillnet surveys for the Poe Reach. Additionally, the climatic influences (average diurnal differences of 10^{o}F) resulting from the lower elevation of this stream reach (900 feet) are far greater than in higher elevation reaches and should be accounted for in any assessments of the health of the water segment. Therefore, this water segment should be removed from the 303(d) list of impaired water bodies.

WATER SEGMENT: North Fork Feather River – Big Bend Reach (between Big Bend Reservoir and Lake Oroville)

POLLUTANT: Water temperature

SOURCE: Flow Regulation/Modification | Hydromodification

STATUS of Proposed 2008 303(d) LISTING: Listed

CVRWQCB STAFF BASIS: After review of the available data and information, Central Valley Regional Water Quality Control Board (CVRWQCB) staff concluded that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards were exceeded and a pollutant contributes to or causes the problem.

PG&E RECOMMENDATION: Do Not List

PG&E COMMENT: Available receiving water aquatic biological data show that the water segment is biologically healthy; therefore, this water body should not be listed for water temperature.

The CVRWQCB listed the NFFR, including this river segment due to exceedances of water temperature guidelines found in Sullivan et. al. (2000) and evidence of fish population/community degradation, as interpreted from the data reported in PG&E (2003). Refer to the Water Segment Delineation Factsheet for discussion regarding the importance of reviewing available data by water segment to determine listing status for specific water segments on the 303(d) list (Attachment A). In addition, appropriate use of the Sullivan report would be to use it strictly as an evaluation guideline (i.e., screening tool) in conjunction with available biological data to determine the health of the water segment (Attachment B).

While there are exceedances of the Sullivan guideline and periodic exceedances of the US EPA guideline, there are no other biological indicators to support listing of this water segment on the 303(d) list.

The CVRWQCB assessment appears to focus on only the gill net surveys from the cited report. This is a very inaccurate representation of this data. A more accurate assessment of the fish assemblage, distribution, and relative composition can be made by reviewing the electrofishing results in Table E3.1-2 (page E3.1-17) and snorkeling results in tables E3.1-4 through 6 (pages E3.1-24 – 26) along with the gillnet survey found at Table E3.1-7. These results show that rainbow trout (all sizes) was the most abundant species observed per 100 ft in the snorkel surveys for all habitats combined

(Table E3.1-4, page E3.1-24). Based on the much greater numbers of rainbow trout reported in the snorkel surveys representing a much broader spectrum of habitat types than the limited gillnet surveys, this stream reach should not qualify as biologically degraded due to the single water temperature guideline presented in Sullivan et. al. (2000).

In addition, the Poe Reach is located at approximately 900 feet in elevation, and this represents approximately a 3,600 foot drop in elevation at this reach compared to the elevation of waters originating at Canyon Dam which would result in much greater climatic influences on water temperature in this stream reach compared to higher elevation reaches on the NFFR.

Conclusion

The available current data show that water temperature alone is not a good measure of the health of water segments. Additionally, the climatic influences (average diurnal differences of 10^{o}F) resulting from the lower elevation of this stream reach (900 feet or less) are far greater than in higher elevation reaches and should be accounted for in any assessments of the health of the water segment. Based upon the elevation of this reach it is unlikely that it would have ever supported COLD beneficial uses under unimpaired hydrology and it is more likely that this river segment is indicative of WARM beneficial uses. Therefore, this water segment should be removed from the 303(d) list of impaired water bodies.

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